



STUDENT LEARNING OUTCOMES

DEGREE-AWARDING PROGRAMS AND SELECT CERTIFICATES

**OFFICE OF INSTITUTIONAL RESEARCH, PLANNING, AND ASSESSMENT
NORTHERN VIRGINIA COMMUNITY COLLEGE**

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The purpose of the Office of Institutional Research, Planning, and Assessment is to conduct analytical studies and provide information in support of institutional planning, policy formulation, and decision making. In addition, the office provides leadership and support in research-related activities to members of the NOVA community engaged in planning and evaluating the institution's success in accomplishing its mission.

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Student Learning Outcomes

Degree-Awarding Programs and Select Certificates



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**Office of Institutional Research, Planning, and Assessment
Northern Virginia Community College**

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Introduction

As part of the recent nation-wide movement to increase accountability and transparency in higher education, Northern Virginia Community College (NOVA) has made the assessment of student learning outcomes a priority. Assessment is defined as “the ongoing process of:

- Establishing clear, measurable, expected outcomes of student learning.
- Ensuring that students have sufficient opportunities to achieve those outcomes.
- Systematically gathering, analyzing, and interpreting evidence to determine how well student learning matches our expectations.
- Using the resulting information to understand and improve student learning.”¹

To begin the process of assessing student learning, programs must first determine the student learning outcomes for their curriculum. Student learning outcomes are defined as “the accumulated knowledge, skills, and attitudes that students develop during a course of study.”²

NOVA determined that all degree-awarding programs and selected certificates must each designate one faculty member to shepherd the program/certificate through the assessment process. In order to provide support to programs and their designated faculty (called SLO Lead Faculty), the Office of Institutional Research, Planning, and Assessment (OIRPA) offered a series of workshops devoted to writing student learning outcomes in Spring 2009. More than fifty faculty members took part in the various sessions offered across the College.

In Fall 2009, SLO Lead Faculty submitted student learning outcomes for their respective programs/certificates. These statements have been gathered together in this report. With this submission, the SLO Lead Faculty and their programs/certificates made significant progress in moving forward with their assessment activities. As defined above, establishing student learning outcomes is only the first step in the ongoing cycle of assessment. Further accomplishments by programs/certificates will be detailed in later reports.

¹ Linda Suskie, *Assessing Student Learning: A Common Sense Guide*. Anker Publishing, 2004.

² <http://www.web.virginia.edu/iaas/assessment/outcomes.htm>

Student Learning Outcomes

Degree-Awarding Programs and Select Certificates

Accounting, A.A.S.

Coordinating Dean: Ron Buchanan, MA; Lisa Donaldson

SLO Lead Faculty: Abdul Baten, MA; Barbara Hopkins, MA

- Not Submitted

Administration of Justice, A.A.S.

Coordinating Dean: Ron Buchanan, MA; Lisa Donaldson

SLO Lead Faculty: Russ Carter, WO

- Name and describe the steps in the criminal adjudication process that involve the police, the courts, and corrections.
- Define the basic teachings of criminology, criminalistics, criminal justice, and forensic science.
- Describe how crime is measured by the means of the Uniform Crime Report, National Crime Victimization Survey, Self-Report data, and the National Incident-Based Reporting System.
- Define generally, domestic and international terrorism, organized crime, classified information, and proprietary information.
- Identify and explain the major perspectives concerning crime causation including the classical approach, biological approach, psychological approach, and the sociological approach.
- Present a Power Point presentation of an ethical dilemma or case study relating to a criminal justice issue.
- Articulate and explain the rights of citizens contained in the 4th, 5th, and 6th amendments related to any one specific case within the criminal justice system.
- Explain basic investigative concepts relating to crime.
- Describe the elements of at least five (5) crimes.

Air Conditioning and Refrigeration, A.A.S.

Coordinating Dean: Timothy Seaman, WO

SLO Lead Faculty: Pat Dennis, WO

- Technical knowledge and capabilities: Design, install, maintain, and repair a basic residential air conditioning and heating system.
- Problem prevention and solutions: Analyze an HVACR system's current operation, evaluate its ability to adequately provide for the equipment owner's comfort requirements, and if necessary, formulate a strategy to correct any deficiencies.

- Presentation, manners, and reliability: Demonstrate the ability to choose attire appropriate to the HVACR customers being served, utilize appropriate manners that will please a diverse population of possible customers, and demonstrate they may be relied upon to perform required duties properly and on time.
- Positive attitude and good work ethic: Demonstrate a positive attitude and good job performance.
- Honesty, ethical behavior, and respect: Assess and demonstrate what is considered honest and ethical behavior in both personal and business situations. Demonstrate respect for others.
- Speech and written communication skills: Perform good communication skills, both oral and written.
- Empathy with both customer and employer: Analyze customer concerns, empathize with their position, and be able to differentiate between the demands of the customer and the position of the technician's employer.
- Priorities and self-image: Demonstrate the ability to set priorities. Demonstrate an ability to perform a personal analysis and evaluation in order to determine an accurate self-image and to formulate a program for improvement, if necessary.
- Productive: Perform good work habits, focused on the task-at-hand, and complete assignments on time.
- Continued improvement in knowledge and skills: Evaluate what additional skills or knowledge may be necessary for personal success, then choose a positive direction to attain them.

American Sign Language to English Interpretation, A.A.S.

Coordinating Dean: Jerry Boyd, AN

SLO Lead Faculty: Paula Debes, AN

- Demonstrate an advanced level of receptive and expressive proficiency in American Sign Language, including knowledge of advanced linguistic structures and vocabulary.
- Demonstrate an advanced level of receptive and expressive proficiency in English, including knowledge of advanced linguistic structures and vocabulary.
- Demonstrate the ability to interpret a 20 minute live and videotaped segment of American Sign Language into English with 80% accuracy.

- Demonstrate the ability to interpret a 20 minute live and videotaped segment of English into American Sign Language with 80% accuracy.
- Demonstrate the ability to transliterate a 20 minute live and videotaped segment of Contact Sign into English with 80% accuracy.
- Demonstrate the ability to transliterate a 20 minute live and videotaped segment of English into Contact Sign with 80% accuracy.
- Apply critical thinking to make ethical decisions regarding a variety of situations, guided by ethics standards of the profession.
- Demonstrate professional behavior and cultural sensitivity when working with deaf and hearing clients.
- Demonstrate the ability to evaluate an interpreting situation, choose the appropriate language/communication method, manage the environment, and work with team interpreters if available.
- Be able to describe the history of the interpreting profession and identify current trends, industry standards, and resources for professional development.

Architecture Technology, A.A.S.

Coordinating Dean: Trudy Streilein, AL

SLO Lead Faculty: Harvey Liebman, AL

- Communicate graphically the architectural aspects of a building for the purposes of presentation and construction using manual drawing.
- Describe how buildings are presently constructed.
- Describe how buildings have been designed and constructed from antiquity to the present.
- Analyze and describe how buildings are structurally supported.
- Describe the systems of heating, cooling, and electrical distribution in buildings.
- Describe how site characteristics influence the design and construction of buildings.
- Communicate graphically the architectural aspects of a building for the purposes of presentation and construction using computer graphics.
- Methodically design a building.

Automotive Technology, A.A.S.

Coordinating Dean: Dee Martin, MA

SLO Lead Faculty: George Bolash, MA

- Use available service manuals in locating specifications related to the inspection, repair, and adjustment of automotive systems. (i.e. Manufacturer's Service Manuals, Mitchell-On-Demand & All-Data, Identifix, etc.)
- Use various test equipment to diagnose and repair defects, to determine the logical cause of the failure through complete and accurate analysis and discuss their findings.
- Properly care for and use common technician hand tools, power equipment, and standard automotive shop equipment according to NOVA's shop safety procedures.
- Use measuring tools to skillfully and accurately diagnose the internal combustion engine.
- Explain the operating principles of automotive fuel systems, ignition systems, emissions, instrumentations, and chassis control and possess a working knowledge of current computerized powertrain management systems.
- Analyze defects of automotive air conditioning and climate control systems and identify necessary preventative maintenance or corrective repairs.
- Explain the operation of, and perform service on, automatic and manual transmissions and transaxles and differentials.
- Apply basic electrical theory using wiring diagrams and schematics to diagnose and repair automotive electrical circuits including battery, starter, and charging systems.
- Discuss the theory of alignment, braking, suspension and steering systems, problem diagnosis and correction of braking, suspension, steering, and alignment problems.
- Diagnose and repair vehicles in all eight areas of ASE certification.

Biotechnology, A.A.S.

Coordinating Dean: Dee Martin, MA

SLO Lead Faculty: Johanna Weiss, MA

- Explain the fundamental scientific concepts in biotechnology.
- Apply the scientific method including: planning and experimenting, collecting data, and analyzing and interpreting data.
- Demonstrate proficiency in standard lab procedures and in the use of basic lab equipment.

- Identify and follow lab safety procedures.
- Maintain proper lab documentation.
- Effectively communicate scientific concepts, strategies, and opinions in written and oral formats.
- Describe the ethical, regulatory, business, and legal aspects of the biotechnology industry.
- Demonstrate professional interpersonal skills and behaviors necessary for working and collaborating in a laboratory environment.

Business Administration, A.S.

Coordinating Dean: Ron Buchanan, MA; Lisa Donaldson, WO

SLO Lead Faculty: John Phillips, MA

- Not Submitted

Business Management, A.A.S.

Coordinating Dean: Ron Buchanan, MA; Lisa Donaldson, WO

SLO Lead Faculty: John Phillips, MA

- Not Submitted

Clinical Data Coding Career Studies Certificate

Coordinating Dean: Andy Cornell, ME

SLO Lead Faculty: Jacqueline Gibbons, ME

- Communicate effectively with HIM professionals, the public, and the healthcare delivery team.
- Demonstrate knowledge of HIM regulatory compliance by oral and written communication.
- Perform quality improvement studies and practice professional ethics in the HIM field.
- Explain information processing in HIM.
- Demonstrate methodologies including problem solving and troubleshooting techniques.
- Demonstrate ethical and professional conduct.
- Apply knowledge of medical coding in diagnosis and treatment.

Communication Design, A.A.S.

Coordinating Dean: Bev Blois, LO

SLO Lead Faculty: Julia Turner, LO

- Research, formulate visual concepts, and solve visual ideas.
- Analyze and evaluate artwork from various perspectives and apply to projects.

- Receive suggestions and criticisms of his or her own work from others and consider the recommendations and apply these recommendations to their final assignments.
- Evaluate visual concepts.
- Design visual concepts based on set criteria.
- Produce visual concepts into completed projects.
- Consider and apply technical and conceptual expertise in the creation of visual concepts.
- Apply the principles of design and elements of composition.
- Choose appropriate techniques and technical tools when expressing visual concepts.
- Organize a group to produce solutions to design problems.

Computer and Electronics Technology, A.A.S.

Coordinating Dean: Abe Eftekhari, AN

SLO Lead Faculty: Charbel Fahed, AN

- Identify and troubleshoot malfunctions in systems.
- Synthesize similar circuits and networks.
- (Remaining SLOs to be revised and submitted.)

Computer Science, A.S.

Coordinating Dean: Dee Martin, MA

SLO Lead Faculty: Michael Carrington, MA

- Demonstrate critical thinking by selecting appropriate data structures and design options.
- Demonstrate proficiency in mathematical modeling using high and low level programming languages.
- Write computer programs using fundamental and advanced software development skills.
- Explain the functions of basic and advanced computer hardware architecture.
- Design fundamental logic circuits.
- Work in groups to design and execute programs to solve problems.

Construction Management Technology, A.A.S.

Coordinating Dean: Trudy Streilein, AL

SLO Lead Faculty: Denise Cantwell, AL

- Communicate effectively consistent with career requirements of the construction management industry (orally and written).

- Accurately interpret construction documentation.
- Identify characteristics of basic construction materials and explain their application in the construction industry.
- Accurately estimate construction costs.
- Accurately prepare construction plans and schedules utilizing industry standards.
- Identify safe construction practices.
- Interpret construction related contractual and legal requirements.
- Perform surveying calculations necessary for site layout.
- Successfully identify and demonstrate skills necessary to manage human resources related to the construction industry.

Contract Management, A.A.S.

Coordinating Dean: Trudy Streilein, AL

SLO Lead Faculty: Ronnie Wheeler, AL

- Illustrate complete basic knowledge of sound principles and techniques of contract management.
- Perform substantive and procedural research using both manual and computer assisted means.
- Organize and role-play effective negotiation exercises on a team.
- Apply and demonstrate oral communication skills in exercises and reports.
- Interpret and develop basic contract fundamentals using different types of contracts.
- Interpret practices, styles, and analysis of cost and price information.
- Prepare and manage project schedules for contract implementation.
- Inter-relate the language of negotiation in contracting.

Dental Hygiene, A.A.S.

Coordinating Dean: Andy Cornell, ME

SLO Lead Faculty: Mary Pryor, ME

- Assess a patient's oral health status.
- Plan and document a patient's treatment needs.
- Provide dental hygiene care to patients who present with slight, moderate, and severe periodontal disease.
- Evaluate the outcomes of treatment and determine subsequent treatment needs.

- Communicate the provision of oral healthcare services with diverse population groups.
- Evaluate and apply scientific literature and principles as a basis for evidenced-based practice.
- Expose and interpret radiographs.

Diagnostic Medical Sonography, A.A.S.

Coordinating Dean: Andy Cornell, ME

SLO Lead Faculty: Anita Freeman, ME

- Work in an ethical, legal, safe, and effective manner in diagnostic imaging.
- Communicate effectively with patients, families, and other healthcare providers.
- Provide patient care essential to sonographic sciences.
- Apply knowledge of anatomy, physiology, and professional and clinical standards to accurately image anatomical structures.
- Determine proper technical equipment parameters to achieve optimum images of anatomical structures.
- Evaluate images for diagnostic information, positioning, and other pertinent technical details.
- Apply knowledge of scanning planes and methods and their usage in anatomical interpretations.
- Effectively use written and verbal communication skills in the evaluation, documentation, and description of normal/abnormal findings in a professional case presentation.
- Practice professional work habits and appropriate interpersonal relationships with patients, families, and other members of the healthcare team.

Drivers Education Career Studies Certificate

Coordinating Dean: Ron Buchanan, MA

SLO Lead Faculty: Karen Sheble, MA

- Summarize instructional content as it relates to the Driver Education Standards of Learning for Virginia Public Schools.
- Illustrate a working knowledge of the Traffic Laws/Motor Vehicles section of the Code of Virginia and the Virginia Drivers' Manual.
- Define and describe the nature of driving tasks as they relate to the complex highway transportation system.
- Analyze and identify driving hazards and correctly interpret how to minimize these risks.

- Define and give examples of the capabilities and limitations of vehicles under various driving conditions.
- Distinguish the legal and moral responsibilities of being a highway transportation user.

Early Childhood Development, A.A.S.

Coordinating Dean: Bev Blois, LO

SLO Lead Faculty: Susan Johnson, LO

- Analyze the elements of a quality program.
- Apply developmental knowledge to the creation and implementation of activities and programs to promote the cognitive development of children.
- Apply developmental knowledge to the creation and implementation of activities and programs which promote physical growth in children.
- Apply developmental knowledge to the creation of activities and programs which promote social and emotional development in young children.
- Apply developmental knowledge to the creation and implementation of activities and programs which promote language in young children.
- Select appropriate strategies when working with children who have exceptionalities or developmental delays.
- Prepare curriculum that supports young children in the development of learning strategies and skills.
- Integrate strategies for working with diverse groups into the curriculum and activities created.

Emergency Medical Services, A.A.S.

Coordinating Dean: Andy Cornell, ME

SLO Lead Faculty: Holly Frost, ME

- EMT-Basic students will perform BLS/airway skills during hands-on skills sessions.
- Paramedic students will perform advanced airway maneuvers and other life support skills during hands-on sessions.
- EMS students, at all levels, will implement patient care assessments and treatments while performing in clinical and field internship settings, as observed by their preceptors, appropriate to their specific training level.

- Students of all EMS levels will demonstrate differential diagnosis competencies regarding a broad variety of medical conditions, covering all age ranges, and will demonstrate appropriate treatment modalities, to their appropriate EMS skill level.

Engineering, A.S.

Coordinating Dean: Abe Eftekhari, AN

SLO Lead Faculty: Rassa Rassai, AN; Robert Woodke, AN

- Apply and demonstrate engineering problem-solving methodology.
- Demonstrate knowledge of engineers' professional responsibility and ethics.
- Demonstrate the ability to design algorithms in solving engineering problems.
- Analyze the position of rigid bodies and their applied forces at rest and in motion.
- Describe mechanics of deformable bodies.
- Demonstrate the ability to work effectively as a team.

Engineering Technology, A.A.S.

Coordinating Dean: Abe Eftekhari, AN; Trudy Streilein, AL

SLO Lead Faculty: Siamak (Mike) Ghorbanian, AL; Rudy Napisa, AN

- Students will be able to apply their knowledge and skills of Computer Aided Drafting to start and complete engineering drafting projects.
- Students will demonstrate the appropriate preparation to perform the functions of an engineering aide or designer in the Engineering Technology field.
- Students will be able to apply the principles of mechanics including fluid mechanics in the analyses and solutions of engineering problems and designs.
- Students will be able to synthesize their knowledge of the fundamentals and practices of engineering technology.
- Students will demonstrate professional skills in oral, written, and graphical communication.
- Students will demonstrate interpersonal skills to function as part of a team.

Fine Arts, A.A., A.A.A.

Coordinating Dean: Jim McClellan, AL

SLO Lead Faculty: Randy Michener, MA

- Produce artworks in several media.
- Create artwork from direct observation.
- Create realistic or abstract/conceptual representations.
- Critically evaluate personal studio art projects or those of other students.
- Critically evaluate artworks in their historical context.
- Describe 2 and 3-dimensional art and how it relates to the culture in which it was created.
- Create a portfolio of visual works/projects that can be used to satisfy transfer or other professional requirements such as presentation to apply for a gallery exhibit.

Fine Arts, A.A.A. – Photography Specialization

Coordinating Dean: Jim McClellan, AL

SLO Lead Faculty: Gail Rebhan, WO

- Control the image capture.
- Control the output process.
- Manage image assets and workflow.
- Solve technical and aesthetic problems independently and creatively.
- Produce and present a coherent body of work in a chosen genre.
- Discuss work in the medium with appropriate vocabulary.
- Discuss images in terms of the history and theory of the medium.

Fire Science Technology, A.A.S.

Coordinating Dean: Adrienne Hinds, AN; Celeste Dubeck-Smith, AN

SLO Lead Faculty: Michael Pariser, AN

- Students will be able to explain the basic theories and fundamentals of how and why fires start, spread and are controlled.
- Students will be able to identify and analyze the components of building construction related to fire and life safety, including inspections, pre-incident planning and emergency operations.
- Students will be able to explain and perform basic responsibilities of company officers including supervision, delegation, problem solving, decision-making, communications and leadership.

- Students will be able to explain the basic philosophy, organization, and operation of fire and injury prevention programs.
- Students will be able to apply the theory and principles for the use of water in fire suppression activities, including hydraulic principles.

Fitness Career Studies Certificate

Coordinating Dean: Joyce Samuels, LO

SLO Lead Faculty: Sue Thompson, AN

- Explain the principles of fitness and demonstrate proper techniques for flexibility, muscular strength, muscular endurance, and cardiovascular exercises.
- Identify the muscular-skeletal structure as it relates to fitness.
- Analyze food intake using nutrition guidelines.
- Interpret results of body composition assessments and apply to weight management strategies.
- Describe injury prevention and demonstrate appropriate treatment.
- Analyze case studies to demonstrate understanding of the physical training concepts and physiological factors of training.
- Instruct individual and group exercise sessions.
- Administer physical fitness assessments on muscular strength, muscular endurance, cardiovascular endurance, flexibility, and body composition.
- Demonstrate correct procedures for cardiopulmonary resuscitation and use of the AED.
- Perform a fitness level of very good to excellent by successfully passing three out of four fitness assessments.

General Studies, A.S. – Recreation, Parks, and Leisure Studies Specialization

Coordinating Dean: Bruce Mann, AN

SLO Lead Faculty: Nancy Chamberlain, AN

- Revised SLOs to be submitted

Geographic Information Systems Career Studies Certificate

Coordinating Dean: Bev Blois, LO

SLO Lead Faculty: Mike Krimmer, LO

- Define and employ geospatial vocabulary.
- Plan and perform spatial analysis.
- Prepare and present geospatial material to an end-user.

- Manage diverse spatial data.
- Plan, develop, and maintain a GIS.

Health Information Management, A.A.S.

Coordinating Dean: Andy Cornell, ME

SLO Lead Faculty: Jacqueline Gibbons, ME

- Interpret and explain health data structure, content, and standards.
- Distinguish and differentiate between healthcare information requirements and standards.
- Apply the clinical classification systems appropriately.
- Analyze and apply reimbursement methodologies as appropriate.
- Apply health statistics, biomedical research, and quality management.
- Analyze and compare quality management and performance improvement activities.
- Apply procedures related to the healthcare delivery system in the U.S.
- Interpret and apply principles as they relate to healthcare privacy, confidentiality, legal, and ethical issues.
- Identify and design information and communication technologies and apply policies and procedures as they relate to data, information, and file structures in healthcare systems.
- Compare and utilize data storage and retrieval techniques.
- Differentiate between human, financial, and physical resources.

Historic Preservation Career Studies Certificate

Coordinating Dean: Bev Blois, LO

SLO Lead Faculty: David Porter, LO

- Students will demonstrate analytical skills in assessing museum exhibits and objects.
- Students will demonstrate the ability to properly care for museum objects.
- Students will produce a preservation portfolio of their work suitable for use during an employment interview.
- (Remaining SLOs to be revised and submitted.)

Horticulture Technology, A.A.S.

Coordinating Dean: Joyce Samuels, LO

SLO Lead Faculty: David Scheid, LO

- Diagnose plant problems and recommend proper controls.
- Use resources to locate horticultural information.
- Calculate areas and volumes of landscape features.
- Correctly identify 200 plants by family and scientific name.
- Neatly draw a landscape plan and quick perspective sketch.

Hospitality Management, A.A.S.

Coordinating Dean: Adrienne Hinds, AN; Celeste Dubeck-Smith, AN

SLO Lead Faculty: Janet Sass, AN

- Compare the various sectors of the hospitality industry and recognize the unique characteristics and attributes of each and their affect on quality of work life.
- Describe and apply the four functions of management: plan, organize, lead, and control.
- Prepare a variety of different food products by following standardized recipes and using appropriate cooking techniques.
- Evaluate and interpret a company's profit and loss statement.
- Illustrate the proper use and care of commercial food production equipment.
- Apply approved food handling/safety standards in the preparation, service, and storage of food.
- Actively participate in the execution of different styles of catering functions.

Information Systems Technology, A.A.S.

Coordinating Dean: Joyce Samuels, LO

SLO Lead Faculty: Carolyn Davis, LO

- Distinguish between a class and an object.
- Define normalization and define why it is necessary in the creation of a relational database.
- Describe memory types and allocation methods.
- Define the OSI reference model and layers.
- Recognize the impact of cyber ethics on the IT field.
- List the advantages and disadvantages of the UNIX operating system.
- Define the process of developing requirements.

Information Technology, A.S.

Coordinating Dean: Joyce Samuels, LO

SLO Lead Faculty: Carolyn Davis, LO

- Distinguish between a class and an object.
- Define normalization and define why it is necessary in the creation of a relational database.
- Describe memory types and allocation methods.
- Define the OSI reference model and layers.
- Identify correct syntax and logic in Java or C++ code.
- Identify components of a multimedia Web site.

Interior Design, A.A.S.

Coordinating Dean: Bev Blois, LO

SLO Lead Faculty: Kristine Winner, LO

- Apply technical drawing skills to graphically illustrate design concepts.
- Utilize basic building and accessibility codes related to the health, safety, and welfare of the public to develop interior floor plans.
- Practice business management including estimating, marketing, business structures, and ethics as they relate to the field of interior design.
- Recognize and evaluate appropriate interior finish materials and textiles, particularly as they relate to issues of sustainability.
- Apply critical, analytical, and strategic thinking skills in the interpretation of project requirements.
- Recognize and identify major styles of art, architecture, and furniture and be able to explain their significance in relation to the design of the present day.
- Demonstrate presentation skills including technical skills required to develop finish boards and oral skills to convey ideas.
- Develop accurately scaled floor plans including furniture and fixtures as well as other construction drawings needed to convey information to a furniture installer or building contractor.
- Produce design projects utilizing basic color theory.
- Illustrate how to light an interior space using a variety of sources of illumination.

Marketing, A.A.S.

Coordinating Dean: Adrienne Hinds, AN; Celeste Dubeck-Smith, AN

SLO Lead Faculty: Katherine Olson, AN

- Communicate effectively in both oral and written formats with grammatical accuracy.
- Use the Internet to locate information concerning target markets and potential sales opportunities.
- Calculate basic business math successfully.
- Describe the elements of the marketing mix (product, price, place, and promotion) and their integration to achieve customer and organization satisfaction.
- Apply the marketing principles such as marketing strategies, sales promotion, sales management, good customer service, public relations, and ethical procedures in consumer and business transactions.
- Explain the importance of global marketing and methods of reaching the international customer.
- Show how to achieve organizational objectives by effectively interacting with others as team members and as team leaders.

Massage Therapy Career Studies Certificate

Coordinating Dean: Tim Seaman, WO

SLO Lead Faculty: Nancy Crippen, WO

- Effectively blend Swedish and deep tissue strokes to perform a full body massage.
- Integrate musculoskeletal anatomy and physiology into massage techniques.
- Identify indications and contra-indications to determine techniques appropriate for each client.
- Demonstrate ethical behavior in the client/therapist relationship.
- Incorporate body mobilization and stretching techniques into bodywork.
- Demonstrate the principles of proper body mechanics when performing massage.
- Perform pre-massage consultations with clients using proper notations on session charts and post-massage evaluations.
- Construct a business plan that addresses business structures, management techniques, and ethics.
- Perform cardiopulmonary resuscitation and basic first aid.

Medical Laboratory Technology, A.A.S.

Coordinating Dean: Andy Cornell, ME

SLO Lead Faculty: Frankie Harris-Lyne, ME

- Communicate effectively to serve the needs of patients, the public, and the healthcare delivery team.
- Demonstrate laboratory safety and regulatory compliance.
- Perform quality assessment in the laboratory.
- Explain information processing in the clinical laboratory.
- Collect, process, and analyze biological specimens.
- Demonstrate methodologies including problem solving and troubleshooting techniques.
- Demonstrate ethical and professional conduct.
- Apply knowledge of the use of laboratory results in diagnosis and treatment.
- Apply knowledge of technical training sufficient to orient new employees.

Music Recording Technology Certificate

Coordinating Dean: Bev Blois, LO

SLO Lead Faculty:

- Not Submitted

Music, A.A., A.A.A., and Jazz Specialization

Coordinating Dean: Jim McClellan, AL

SLO Lead Faculty: Mark Whitmire, AL

- Render a performance that is musically expressive and technically accurate.
- Analyze the musical structure of a composition.
- Perform pieces, exercises, scales, and progressions accurately.
- Perform effectively in a group.
- Provide an overview of the history of music / history of jazz and popular music.
- Effectively research and write on topics in the area of music / jazz and popular music.

Nursing, A.A.S.

Coordinating Dean: Flo Richman, ME

SLO Lead Faculty: Patricia Tumminia, ME

- Demonstrate quantitative reasoning in the practice of nursing.
- Demonstrate using community-based nursing in the promotion

- of health, in providing for a safe and effective environment, and promoting/maintaining physiological and psychological integrity.
- Utilize the nursing process, critical thinking strategies, and Maslow's Hierarchy of Needs to provide nursing care along the health/illness continuum throughout the life cycle.
 - Provide culturally competent therapeutic nursing care to clients with common, well-defined health needs in community-based settings.
 - Communicate effectively in diverse settings.
 - Utilize the teaching/learning process in providing nursing care.
 - Demonstrate the ability to manage client care.
 - Demonstrate the use of critical thinking throughout the nursing process in the provision of client care.

Paralegal Studies, A.A.S.

Coordinating Dean: Trudy Streilein, AL

SLO Lead Faculty: Teresa Blier, AL

- Speak knowledgeably about the paralegal profession and define the difference between the roles of attorneys and paralegals.
- Identify legal issues as they are presented in the context of hypothetical client scenarios involving the eight areas of law covered in the curriculum (business organization, contract, criminal, estate planning and probate, evidence and procedure, family, real estate, and tort law).
- Locate governing federal or state Constitutional provisions, statutes, regulations, and case decisions, using both manual and computer assisted means.
- Analyze and reason to apply legal principles to factual situations.
- Identify and locate standard forms appropriate to specific legal problems.
- Draft legal documents including but not limited to pleadings, contracts, wills, and deeds.
- Identify the courts or agencies having jurisdiction over various cases at various stages in litigation.
- Speak clearly about a legal issue and its resolution.
- Write clearly, using appropriate citation form, about a legal issue and its resolution.
- Identify and resolve ethical issues presented in the course of hypothetical client situations.

Phlebotomy Career Studies Certificate

Coordinating Dean: Andy Cornell, ME

SLO Lead Faculty: Frankie Harris-Lyne, ME

- Communicate effectively to serve the needs of patients, the public, and the healthcare delivery team.
- Demonstrate laboratory safety and regulatory compliance.
- Perform venipuncture and dermal puncture collection, handling, and processing.
- Demonstrate ethical and professional conduct.
- Develop problem-solving skills in the pre-analytical phase of specimen collection.
- Relate knowledge of body systems with the most common diagnostic laboratory testing for each system.

Photography, A.A.S.

Coordinating Dean: Jim McClellan, AL

SLO Lead Faculty: Aya Takashima, AL

- Control the image capture and output process.
- Manage image assets and workflow.
- Solve technical and aesthetic problems independently.
- Produce and present a coherent body of work in a chosen genre.
- Discuss work in the medium with correct and appropriate vocabulary.
- Discuss images in terms of the history and theory of the medium.
- Apply new techniques and theories as the medium evolves.
- Identify with career options in the field.

Physical Therapist Assistant, A.A.S.

Coordinating Dean: Andy Cornell, ME

SLO Lead Faculty: Patricia Ottavio, ME

- Implement a treatment under the direction and supervision of a physical therapist.
- Perform data collection and measurement techniques selected by a physical therapist.
- Solve clinical problems and make treatment decisions based on the plan of care established by a physical therapist.
- Effectively communicate when working with patients, families, colleagues, and other healthcare professionals.
- Work in an ethical, legal, safe, and effective manner under the direction and supervision of a physical therapist.

- Develop lifelong learning habits that reflect professional development.

Professional Writing for Business, Government, and Industry Certificate

Coordinating Dean: Dan Lewis, WO

SLO Lead Faculty: Joyce Brotton, AN

- Apply all phases of the writing process including prewriting, drafting, revision, documenting sources, and avoiding plagiarism.
- Write a precise, clear, and properly formatted technical report.
- Compose a written business document in contemporary business format and style.
- Write and research articles following conventions and ethics of journalistic writing.
- Compose and edit hypertext documents with consistent tone, ethics, and style for the World Wide Web.
- Recognize correct fundamentals of English grammar, including punctuation, and basic logic of written communication.
- Produce edited documents with application of copy and comprehensive editing.
- Design, write, and test a user manual.
- Apply knowledge gained in the entire program in the Capstone Writing Internship.

Radiography, A.A.S.

Coordinating Dean: Andy Cornell, ME

SLO Lead Faculty: Marilyn Sinderbrand, ME

- Apply knowledge of radiation protections to minimize patient dose.
- Communicate effectively to serve the needs of the community and other healthcare providers.
- Apply patient care essentials to radiologic sciences.
- Apply knowledge of anatomy and positioning to accurately image anatomical structures.
- Evaluate images for diagnostic information.
- Determine proper exposure factors to achieve optimum images.

Real Estate Brokerage Career Studies Certificate

Coordinating Dean: Adrienne Hinds, AN; Celeste Dubeck-Smith, AN

SLO Lead Faculty: Frank Lembo, AN

- Apply Principles of Real Estate in order to effectively perform the duties of a salesperson.
- Demonstrate an ability to set up and manage a real estate firm and establish a business plan for the firm.
- Prepare appraisals using three appraisal approaches (market approach, cost approach, and the income approach).
- Explain the difference between the primary and secondary mortgage markets and be able to assist a client in obtaining financing.
- Describe the legal interest in real estate and the financing instruments affecting a real estate transaction and be able to fill out a purchase agreement.

Real Estate Residential Appraisal Career Studies Certificate

Coordinating Dean: Adrienne Hinds, AN; Celeste Dubeck-Smith, AN

SLO Lead Faculty: Frank Lembo, AN

- Prepare appraisals using the three appraisal approaches (market approach, cost approach and the income approach).
- Explain the difference between the primary and secondary mortgage markets and be able to assist a client in obtaining financing.
- Demonstrate an ability to choose the proper appraisal approach to appraise single family residences and render a proper appraisal report.
- Apply Virginia appraisal law and standard principles and practices with regard to their application to residential property appraising.

Respiratory Therapy, A.A.S.

Coordinating Dean: Andy Cornell, ME

SLO Lead Faculty: Kathy Grilliot, ME

- Demonstrate knowledge of the anatomy and physiology of the cardiopulmonary system; assessment, treatment, and evaluation of patients with cardiopulmonary disease using SOAP notes.
- Perform psychomotor and cognitive skills in areas of non-critical care.
- Perform the psychomotor and demonstrate the cognitive skills in all areas of adult critical care.

- Perform the psychomotor and demonstrate the cognitive skills in all areas of neonatal/pediatric critical care.
- Perform the psychomotor and demonstrate the cognitive skills in the areas of respiratory therapy home care, patient education/disease management, pulmonary rehabilitation, and cardiac diagnostics.
- Apply the knowledge of respiratory therapy information into patient care case studies and scenarios.
- Demonstrate ethical and professional conduct in the classroom, laboratory, and clinical settings.
- Communicate effectively with respiratory care and other healthcare professionals.

Social Sciences, A.S. – Teacher Education Specialization

Coordinating Dean: Ron Buchanan, MA

SLO Lead Faculty: Karen Sheble, MA

- Identify and describe the licensure/certification requirements for teacher education (pre K-12).
- Summarize, reflect upon, and outline field experiences in the public school systems during 40 field placement hours.
- Compare and analyze principles, theories, and history of education in the U.S. to actual practice in the classroom.
- Summarize and give examples of the field of education; focusing on the inter-relationship of teaching, learning, students, and society.
- Illustrate and explain assessment techniques in the public school systems.
- Prepare and compose topics related to practice in a variety of communities, identifying students of differing ages and with culturally diverse and exceptional populations.

Substance Abuse Rehabilitation Counselor Certificate

Coordinating Dean: Jim McClellan, AL

SLO Lead Faculty:

- Not Submitted

Veterinary Technology, A.A.S.

Coordinating Dean: Joyce Samuels, LO

SLO Lead Faculty: Leslie Sinn, LO

- Participate in facility management utilizing traditional and electronic media and appropriate medical terminology and abbreviations.
- Communicate in a professional manner in all formats-written, oral, non-verbal, and electronic.
- Follow and uphold applicable laws and the veterinary technology profession's ethical codes to provide high quality care to patients.
- Safely and effectively administer prescribed drugs to patients.
- Accurately dispense and explain prescribed drugs to patients.
- Demonstrate and perform patient assessment techniques in a variety of animal species.
- Understand and demonstrate husbandry, nutrition, therapeutic, and dentistry techniques appropriate to various animal species.
- Safely and effectively manage patients in all phases of anesthetic procedures.
- Safely and effectively select, utilize, and maintain anesthetic delivery and monitoring instruments and equipment.
- Understand and integrate all aspects of patient management for common surgical procedures in a variety of animal species.
- Understand and provide the proper instruments, supplies, and environment to maintain asepsis during surgical procedures.
- Properly package, handle, and store specimens for laboratory analysis.
- Properly carry out analysis of laboratory specimens.
- Safely and effectively produce diagnostic radiographic and non-radiographic images.
- Safely and effectively handle common laboratory animals.
- Understand and demonstrate the approach to providing safe and effective care for birds, reptiles, amphibians, guinea pigs, hamsters, gerbils, and ferrets.

Web Design Manager Certificate

Coordinating Dean: Bev Blois, LO

SLO Lead Faculty: Julie Turner, LO

- Apply the principles of Web and interface design.
- Develop graphics to include in designs.
- Design HTML and interactive-based interfaces.
- Consider and apply technical and conceptual expertise in the creation of Web designs.
- Discriminate aesthetic aspects as they apply to Web design.
- Evaluate visual concepts as they apply to Web design.
- Receive suggestions and criticisms from others and consider and apply these recommendations to final assignments.
- Organize a group to produce solutions to design problems.

Welding: Basic Techniques Career Studies Certificate

Coordinating Dean: Dee Martin, MA

SLO Lead Faculty: Steve Shafer, MA

- Perform technical work related to welding applying OSHA safety and industry standards in a work environment.
- Apply physics, chemistry, and basic electrical principles/power source knowledge to solve typical problems and make decisions involving welding related tasks as well as when they write and specify welding procedure.
- Fabricate a project and estimate the cost of the welding consumables and metal.
- Select appropriate filler material for compatible admixing and dilution in the writing of welding procedure for various ferrous and non-ferrous metals.
- Read and correctly interpret basic welding fabrication drawings, sketches, symbols, and/or welding specifications.
- Demonstrate proficiency of the welding subject through hands-on performance, written work, and in theory.

NOVA Mission and Strategic Goals: 2005–2015

Mission

The mission of Northern Virginia Community College is to respond to the educational needs of its dynamic and diverse constituencies through an array of comprehensive programs and services that facilitate learning and workforce development in an environment of open access and lifelong educational opportunities.

Strategic Goals

- I. **STUDENT SUCCESS** – Northern Virginia Community College will move into the top tier of community colleges with respect to the retention, graduation, transfer, and career placement of its students.
- II. **ACCESS** – Northern Virginia Community College will increase the number and diversity of students being served to mirror the population growth of the region.
- III. **TEACHING AND LEARNING** – Northern Virginia Community College will focus on student success by creating an environment of world-class teaching and learning.
- IV. **EXCELLENCE** – Northern Virginia Community College will develop ten focal points of excellence in its educational programs and services that will be benchmarked to being the best in the nation and strategic to building the College's overall reputation for quality.
- V. **LEADERSHIP** – Northern Virginia Community College will serve as a catalyst and a leader in developing educational and economic opportunities for all Northern Virginians and in maintaining the quality of life and economic competitiveness of the region.
- VI. **PARTNERSHIPS** – Northern Virginia Community College will develop strategic partnerships to create gateways of opportunity and an integrated educational system for Northern Virginians who are pursuing the American Dream.
- VII. **RESOURCES** – Northern Virginia Community College will increase its annual funding by \$100 million and expand its physical facilities by one million square feet in new construction. This includes the establishment of two additional campuses in Western Fairfax and Loudoun Counties, as well as additional education and training facilities in or near established population centers.



Northern Virginia Community College
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